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H04L 27/00San Diego, CA 92129 (US). ROH, Mark: 9624 Caminito
del Feliz, San Diego, CA 92121 (US). BUTLER, Brian:
8736 Glenwick Lane, La Jolla, CA 92037 (US). CHALLA,
Raghu: 9494 Carroll Canyon Road #61, San Diego, CA
92126 (US).

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(74) Agents: WADSWORTH, Philip, R. et al.: Qualcomm Incorporated, 5775 Morehouse Drive, San Diego, CA 92121-1714 (US).

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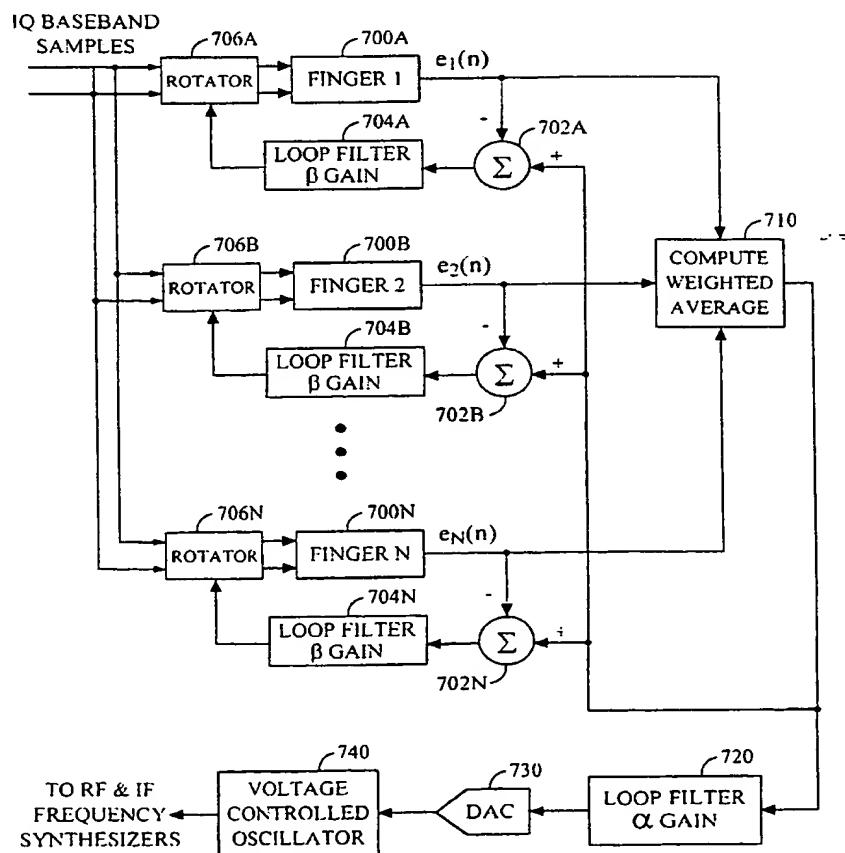
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5775 Morehouse Drive, San Diego, CA 92121-1714 (US).(72) Inventors: AGRAWAL, Avneesh: 809 Pitkin Loop, San
Jose, CA 95125 (US). SIH, Gilbert: 7804 Pipit Place.

[Continued on next page]

(54) Title: MULTIPATH DOPPLER-ADJUSTED FREQUENCY TRACKING LOOP



(57) **Abstract:** A novel and improved method and apparatus for frequency tracking is described. Two main sources of error that contribute to the frequency difference between locally generated carriers and those used to modulate received signals include frequency offset between the two timing sources and doppler effects due to relative movement between the sources. The present invention provides a tracking mechanism for removing the effects of error due to frequency offset as well as compensation for frequency error due to doppler in a plurality of multipath signals. Each finger (700a..700n) of a RAKE receiver utilizing the present invention will compute a frequency error for that finger. The weighted average of all of these frequency errors is calculated (710) and filtered (720) to provide a control signal for varying the frequency of IF and RF frequency synthesizers, accounting for the common frequency offset seen at each finger. Additionally, each finger is equipped with a rotator (706a..706n) for providing frequency adjustment specific to that finger. The frequency of each finger is adjusted through feedback of the frequency error finger.

WO 01/59937 A3



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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X A	WO 00 38343 A (KONINKL PHILIPS ELECTRONICS NV) 29 June 2000 (2000-06-29) abstract; claims 1-10; figure 3 page 7, line 27 -page 8, line 7 page 9, line 12 -page 11, line 2 page 5, line 10 -page 7, line 10 ---	1-9, 15-17 10-14, 18-22
A	US 5 659 573 A (BRUCKERT EUGENE J ET AL) 19 August 1997 (1997-08-19) claim 1; figures 4,8 column 11, line 13 -column 12, line 15 column 12, line 52 -column 13, line 1 ---	1-22
A	EP 0 675 606 A (NIPPON TELEGRAPH & TELEPHONE) 4 October 1995 (1995-10-04) abstract; figures 1-3 page 3, line 52 -page 4, line 3 ----	1-22

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel: (+31-70) 340-2040, Tx. 31 651 epo nl.
 Fax: (+31-70) 340-3016

Authorized officer

Amadei, D

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Information on patent family members

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